



REAM LINE

PRE-REAM DRILL SIZE TABLE FOR REAMING

Material	Ø up to 6 mm	Ø up to 10 mm	Ø up to 16 mm	Ø up to 25 mm	Ø over 25 mm
Steels up to 700 N/mm ²	0,1 - 0,2	0,2	0,2 - 0,3	0,3 - 0,4	0,4
Steels 700 - 1000 N/mm ²	0,1 - 0,2	0,2	0,2	0,3	0,3 - 0,4
Cast steel	0,1 - 0,2	0,2	0,2	0,2 - 0,3	0,3 - 0,4
Cast iron GG	0,1 - 0,2	0,2	0,2 - 0,3	0,3 - 0,4	0,3 - 0,4
Cast iron GGG	0,1 - 0,2	0,2	0,3	0,3 - 0,4	0,4
Copper	0,1 - 0,2	0,2 - 0,3	0,3 - 0,4	0,4	0,4 - 0,5
Brass - Bronze	0,1 - 0,2	0,2	0,2 - 0,3	0,3	0,3 - 0,4
Light alloys	0,1 - 0,2	0,2 - 0,3	0,3 - 0,4	0,4	0,4 - 0,5
Plastics, hard	0,1 - 0,2	0,2	0,4	0,4 - 0,5	0,5
Plastics, soft	0,1 - 0,2	0,2	0,2	0,3	0,3 - 0,4

Stock allowance (recommended values in mm)

Due to the efficient action of the spiral, the values for quick spiral reamers may be increased by 50 to 100%.



APPLICATION INDICATIONS AND SOLUTIONS FOR REAMING

Problem	Cause	Solution
Diameter is too large	<ul style="list-style-type: none"> • Cutting speed is too high • Feed rate is too high • Insufficient lubricating coolant delivery • Incorrect lubricating coolant composition • Point is too short or very uneven • Tool or machine spindle rotation incorrect • Due to low-density or flexible structure, the working material enlarges 	<ul style="list-style-type: none"> • Reduce cutting speed • Reduce feed rate • Ensure good lubricating coolant delivery • Ensure correct lubricating coolant composition • Lengthen point or reduce point angle • Centrally clamp or guide the reamer. Use a reamer chuck • Reduce reamer diameter
Diameter is too narrow	<ul style="list-style-type: none"> • Cutting speed is too low • Feed rate is too low • Chip removal rate is too low • Point is too long • Tool is ground smooth • The working material is of high density or has an inflexible structure • Reamer of insufficient size • Too much heat created when reaming. Shrinking borehole • Tool diameter too small 	<ul style="list-style-type: none"> • Increase cutting speed • Increase feed rate • Increase machining allowance • Select a smaller point • Check the tool and replace in good time • Increase reamer diameter • Select a higher allowance • Increase lubricating coolant delivery • Select the correct diameter
Heavy wear	<ul style="list-style-type: none"> • Insufficient size 	<ul style="list-style-type: none"> • Select a larger diameter
Borehole is not round or is conical	<ul style="list-style-type: none"> • Incorrect positioning in the machine spindle • Alignment error between the tool and the borehole • Asymmetrical point angle • Incorrect tool run-out • Clearance angle too great • Point is not round • Insufficient guide 	<ul style="list-style-type: none"> • Check the spindle and correct its position • Use front-cutting reamers • Re-sharpen point angle • Centrally clamp tool, use reamer chuck and guide • Reduce clearance angle when re-sharpening • Evenly sharpen and round the point
Poor surface quality	<ul style="list-style-type: none"> • Worn tool • Front rake angle is too small • Cutting speed is too low • Feed rate is too low • Workpiece tends to stick (built-up edge) • Cutting exit is sharp-edged • Insufficient lubricating coolant delivery • Incorrect lubricating coolant composition • Cutting is uneven • Defective point 	<ul style="list-style-type: none"> • Replace or re-sharpen tool in good time • Re-sharpen correctly • Increase cutting speed • Increase feed rate • Increase clearance angle and front rake angle; use highly fluid lubricant • Round and smooth the borehole exit • Ensure good lubricating coolant delivery • Ensure correct lubricating coolant composition • Grind the point and guide piece to an evenly round shape or to a tapered shape • Finely smooth or lap the point round and smooth the guide piece joint
The tool jams and breaks	<ul style="list-style-type: none"> • Borehole is too narrow • Bevel width is too great • Shaft is too short • Worn tool 	<ul style="list-style-type: none"> • Reduce material cross-section • Check the tool and replace if necessary • Check the tool and replace if necessary • Replace or re-sharpen tool in good time
Borehole exit too narrow	<ul style="list-style-type: none"> • Feed rate when removing the reamer from the borehole is too high 	<ul style="list-style-type: none"> • Reduce feed rate shortly before passing through or use even feed rate
Broken off or deformed driver	<ul style="list-style-type: none"> • Incorrect position between shaft and clamping device 	<ul style="list-style-type: none"> • Keep shaft and clamping device clean and undamaged

